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ASSESSING AND COMPARING PLAYERS POSITIONS MENTAL SKILLS OF IRAN MEN'S NATIONAL JUNIOR VOLLEYBALL TEAM

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ABSTRACT

History and objectives: Mental skills are important aspects of successful sport performance in all sport competitions. This study was designed to assess and compare players' positions mental skills of Iran men's national junior volleyball team in year 2015.

Materials and methods: This cross sectional research includes 16 Iran men's national junior volleyball team players invited to the preparation training in year 2015. Mental skills as well as demographic data of the players was assessed by OMSAT-3 questioner and a personal data form. SPSS: PC 16.0 software and One-way ANOVA was employed to analyze the data. *Results: Conclusion and Discussion:* The result of this study showed that mental skill is an important aspect of sport performance and may play a role in protecting the athletes against sport injury. Further research is needed to determine the effect of mental skill training on decreasing the incidents of sport injuries.

INTRODUCTION

The importance of physical preparation for successful sport performance is a well-known fact and all the coaches and trainers employ all the available sources to assure that their athletes are physically prepared for competitions. However, with the many research findings and successful sport performance analysis of elite athletes reports, nowadays all the researchers and practitioners in the field of athlete preparation for successful sport performance in major sport competitions and different sport fields agree that physical skills and physical fitness alone are not adequate to assure highly successful performances unless the athletes are equally mentally prepared to take part in their important sport contest. The significance of mental skills and preparation led to the development of sport psychology and ever since the field has been established, attempt to study and prepare the athletes mentally have been underway and numerous researches have been conducted to assess the mental skills of athletes in various level and different contests in different countries [1, 2]. For that reason, psychological preparation of athletes became a part of athletic trainings in many sport field and sport coaches and trainers use mental preparation for the successful performance and competition [3, 4]. For assessment of mental skills of athletes, various approaches and tools have been developed. Following many years of research and development in this subject, Ottawa Mental Skills Assessment Tool-3 was introduced by Durand-Bush and Salmela [2001] named the Ottawa Mental Skills Assessment Tool-3 (OMSAT-3) to measure a broad range of mental skills important for sport performance. Mental skill assessment has become an important field of research for nearly all aspects of sport competitions including students' Olympiads [5]. Mental skills are procedure that helps athletes control their minds efficiently and consistently as they execute sport - related goals. Psychological skills techniques help athletes adjust their action, thoughts, feeling and physical sensation that will improve their games. Since OMSAT-3 was introduced, the tool had been used in many countries for many sport fields. The instrument validity and reliability has been established and used in Iran as well as other countries [6,7,8,9,1]. Individual sport and team sport athletes need to learn mental skills and make the training part of their sport preparation for competing in sport contests. While individual sport may require competing against other athletes, in team sports there are different positions that may require different mental preparation and training. In this regard, Najah and associates [2016] conducted a research to compare the mental skill level of young soccer players and concluded that there was a significant difference between the mental skill level of different positions. Guelmami and associates [2014] conducted a research involving different sports and concluded that psychological skills distinguished between more and less successful talented athletes.

However, other studies reported that there were no significant differences between different position specific play in soccer and various psychological attributes [10,11]. This study was designed to determine the mental skill level of volleyball players in junior level of Iran in year [2015].

MATERIALS AND METHODS

Ottawa-Mental Skill-3 was employed to compare the mental skill level of volleyball players in junior national league of Iran in year [2015].

This tool has been used extensively and is validated for measuring mental skills of Iranian athlete [8]. The instrument measures 12 sub-skills within three components divided into basic including Goal Setting, Self Confidence, Commitment, psychosomatic including Stress Reactions, relaxation, Fear Control, Activation and cognitive component such as Relaxation, Imagery, Mental Practice, Focusing, Refocusing and Competition Planning rated on 6-point Likert scale answered as "strongly disagree" to "strongly agree"

KEY WORDS

Mental Skills, Volleyball, Junior Team

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The OMSAT-3's scales have demonstrated acceptable internal consistency ($\alpha = .68$ to $.88$, mean $.78$) and temporal stability ($r = .78$ to $.96$, mean $.86$; [12]). The data were collected at the competition sites during the games. All the players invited to national junior team including 16 players participated in this research. Every player individually was asked to complete the OMSAT-3 form. Every form was collected in the same session. Statistical analysis including independent t-test was performed on data by using SPSS:PC 16.0 software.

RESULTS

Kolmogorov-Smirnov test result indicated that the subscales of OMSAT-3 had normal distribution ($P > 0.05$); therefore, parametric statistical test was employed to analyze the data. Descriptive statistics including mean and standard deviations of positions and fundamental, psychosomatic and cognitive skills of men's national junior volleyball players based on position is presented in [Table 1]

Table 1: Means \pm standard deviations of the OMSAT-3 sub-scale scores of men's national junior volleyball players based on position

Skills	positions	N	Mean	Std. Deviation
Fundamental	Set	3	6.4722	.64729
	Power spiker	7	6.2143	.83729
	Behind the line	2	6.2083	.64818
	Libero	2	6.2083	1.00173
	Speed spiker	2	5.2083	.05893
Psychosomatic	Set	3	4.1875	.38017
	Power spiker	7	4.3304	.42192
	Behind the line	2	3.9375	.17678
	Libero	2	5.0000	.44194
	Speed spiker	2	4.9375	.00000
Cognitive	Set	3	4.2167	.33292
	Power spiker	7	4.4357	.50143
	Behind the line	2	4.7750	.03536
	Libero	2	5.2500	.42426
	Speed spiker	2	5.1500	.28284

The result of One-Way ANOVA indicated that there were no significant differences among the means of fundamental, psychosomatic and cognitive skills of men's national junior volleyball players Iran in year 2015. These results are presented in [Table 2].

Table 2: One- Way ANOVA comparing the means of fundamental, psychosomatic and cognitive skills of different positions of men's national junior volleyball players

Skills	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.
Fundamental	Between Groups	2.124	4	.531	.903	.495
	Within Groups	6.471	11	.588		
	Total	8.595	15			
Psychosomatic	Between Groups	1.892	4	.473	3.285	.053
	Within Groups	1.584	11	.144		
	Total	3.476	15			
Cognitive	Between Groups	2.128	4	.532	2.939	.070
	Within Groups	1.991	11	.181		
	Total	4.120	15			

Further analysis was performed on sub scales of fundamental, psychosomatic, and cognitive skills of OMSAT-3 for different positions of Volleyball players separately. The result of analysis indicated that there was no significant differences between the fundamental sub scales of goal-setting ($p = 0.586$), confidence ($p = 0.582$), and commitment ($p = 0.584$) of different position of the junior national volleyball players. These results are presented in [Table 3].

Similar analysis was performed on sub scales of psychosomatic skills of different positions of Volleyball players separately. The result of analysis indicated that there was no significant differences between the psychosomatic sub scales of stress reaction ($p = 0.244$), relaxation ($p = 0.763$), fear control ($p = 0.061$) and activation ($p = 0.860$) of different position of the junior national volleyball players. These results are presented in [Table 4].

Table 3: One- Way ANOVA comparing the means of fundamental sub scales of goal-setting, confidence and commitment of men's national junior volleyball players

Sub-scales	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.
goal	Between Groups	2.120	4	.530	.737	.586
	Within Groups	7.908	11	.719		
	Total	10.027	15			
confid	Between Groups	1.902	4	.476	.744	.582
	Within Groups	7.031	11	.639		
	Total	8.934	15			
commitment	Between Groups	2.768	4	.692	.739	.584
	Within Groups	10.295	11	.936		
	Total	13.062	15			

Table 4: One- Way ANOVA comparing the means of psychosomatic sub scales of stress reaction, fear control, relaxation and activation of the junior national volleyball players

Sub-scales	Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.
stress reaction	Between Groups	7.549	4	1.887	1.595	.244
	Within Groups	13.013	11	1.183		
	Total	20.562	15			
relaxation	Between Groups	2.494	4	.624	.461	.763
	Within Groups	14.881	11	1.353		
	Total	17.375	15			
fear control	Between Groups	7.400	4	1.850	3.113	.061
	Within Groups	6.537	11	.594		
	Total	13.938	15			
activation	Between Groups	.931	4	.233	.318	.860
	Within Groups	8.054	11	.732		
	Total	8.984	15			

Additional analysis showed that there was not a significant differences among the sub scales of cognitive skills of different positions of Volleyball players in imagery ($p=0.876$), mental practice ($p=0.822$), and competition plan ($p=0.906$) of the junior national volleyball players separately. However, the result showed that there was a significant difference among the means of focusing (0.048) and refocusing (0.002) of different positions. These results are presented in [Table 4].

Table 5: One- Way ANOVA comparing the means of cognitive sub scales of focusing, refocusing, imagery, mental practice and competition plan of the junior national volleyball players

Sub-scales	Sources of variations	Sum of Squares	df	Mean Square	F	Sig.
focusing	Between Groups	10.295	4	2.574	3.405	.048
	Within Groups	8.314	11	.756		
	Total	18.609	15			
refocusing	Between Groups	21.751	4	5.438	8.512	.002
	Within Groups	7.027	11	.639		
	Total	28.777	15			
imagery	Between Groups	.338	4	.084	.294	.876
	Within Groups	3.162	11	.287		
	Total	3.500	15			
Mental practice	Between Groups	1.463	4	.366	.375	.822
	Within Groups	10.720	11	.975		
	Total	12.184	15			
Competition plan	Between Groups	1.298	4	.325	.246	.906
	Within Groups	14.510	11	1.319		
	Total	15.809	15			

Therefore, LSD post hoc method of comparison among the means focusing and refocusing players was employed to locate the differences. The result showed that there was significant differences among the setters and other positions ($p < 0.05$) in focusing and between the liberoes – setter and the other positions ($p < 0.05$). The setters scored significantly higher than the other positions in focusing and the setters as well as the liberoes scored significantly higher than the other positions in refocusing.

DISCUSSION

The purpose of this research was to compare the mental skills of junior national volleyball players in different positions. For this purpose, OMSAT-3 that is commonly used for this type of research was employed. The instrument has been extensively used in the literature and has been validated in Iran [8] includes three important components of mental skill including the basic, psychosomatic and cognitive skills of athletes. The basic component includes Goal Setting, Self Confidence, Commitment, psychosomatic includes Stress Reactions, Relaxation, Fear Control, Activation and in cognitive component there are the subskills of Imagery, Mental Practice, Focusing, Refocusing and Competition Planning. The game of volleyball is a relatively popular game in Iran and recently successful performance of the Iranian teams in international sport competition at various age groups has been achieved. The game includes three categories of players including attackers (spikers), receivers, basically the libero and the setter that must set the ball for the attackers. The result of analysis of the main components of mental skills of different positions of players, that is, the basic, psychosomatic and cognitive skills of junior volleyball players who were invited to national team camp, there was no significant differences across the positions of players ($p > 0.05$). In this regard, the findings were not similar to what was reported earlier by Najah and Rejab (2015) who investigated selected psychological skills of male youth soccer players in different playing positions. In their study, different positions of youth Tunisian soccer players between the ages of 15 to 19 years old from different clubs of 1st and 3rd Youth Class divisions were compared. The difference in findings of that research with the present research findings may be attributed to the difference in the game since soccer players have more players in a team and more positions. In addition, the players were selected from different classes. The present research included volleyball game positions which is different than soccer and included national players invited to the preparation camp that place a restriction on the number of participants in the research. Usually 16 players are the last stage players that finally 4 of them with negligible skill ability are eliminated from the final list. However, when the subskills of every component were analyzed, there was a significant difference between the mental subskills of different positions in focusing and refocusing ($p = 0.04, 0.002$). Post hoc test result showed that there was a significant differences between the setters and other positions ($p < 0.05$) in focusing. In addition, a significant differences was found between the liberoes – setter and the other positions ($p < 0.05$) in refocusing. The higher scores setters and liberoes in mental sub skills of focusing and refocusing is an indication of the significance of these two skills. The setters need to be focused at all times since they are the mastermind of the game and if they are focused on their own team players position and the opponents as well, they can successfully set a pass that the attackers in their team easily score while take advantage of the poor position of the opponents on the net as well as on the court. Thus the success of a setter depend on not only on a good pass but also on how he set the ball for the attacker who is in the best position to spike. This process of information that has to take place in a fraction of second requires full attention to all the possible events taking place in the own team as well as the opponent team's court. In a cross-sectional survey design using Bull's Mental Skills Questionnaire and the Athletic Coping Skills Inventory-28 (ACSI-28), a insignificant differences between the subscale scores of the players in different playing positions, it was concluded that no psychological skill differences was present among players in different playing positions [10]. This finding is relatively similar to the finding of the present research except the focusing and refocusing subskills. The difference in these variables may be attributed to the difference in task demands of volleyball versus soccer. Volleyball is played in a smaller court compared to soccer that is played in a large field. Loss of focusing or ability to refocus in soccer may not matter as much as it matters on volleyball where poor focusing in the game may cost a point in every service whereas such may not be the case for many positions in the soccer game.

In summary, despite the fact that there was no significant difference among the three main components of mental skills of the junior national volleyball players, the mean scores of the component particularly the psychosomatic component ranged between 4. To 5. Based on the scoring values for every subskill, the highest value score is 7. Thus, there is a need for the players to improve their mental skills by learning the methods of training to become more proficient in these sub skills. The players were relatively more efficient in basic components and scored higher in every subskill. It may be concluded that the basic subskills of commitment, goal-setting and self-confidence improve through many years of training and competitions without particular training interventions. The players who are invited to national team may have gained these subskills after several years of practice and competition experiences. Goal setting have a significant effect on performance by directing the attention and actions of an individual or group; mobilizes effort, increases persistence in addition to causing motivation increase to search for appropriate performance. Goal setting theory was initially developed by Locke and Latham (1994) in organizational psychology, and was used to describe achievement behaviors in industry. Goal setting is one of the most

effective psychological strategies for improving performance and motivation in organizational settings . Self-confidence is another important subscale of mental skill. Self-efficacy is a specific self-perception, and has been referred to as a situational specific form of self-confidence [13]. and the inverse relationship with anxiety has been reported [14]. Bandura [1997] argued that efficacy expectations to perform a given task could influence self-perceptions (e.g., self-confidence) when the success/is heavily dependent on self-worth. It needs to be mentioned that the scope of this research was limited to junior volleyball players invited to the national camp training. Larger scale research with the junior league of volleyball players is needed to make more comprehensive conclusions.

CONCLUSION

The result of this research showed that there were no significant differences among the three main components of sport mental skill measured by OMSAT-3 between the junior national volleyball players of different position in year [2015]. However, there were significant differences between the focusing and refocusing skills of setters and liberoes compared to other position. Based on the result of this research, all players participating in competitive volleyball need higher level of mental skills. More research is needed to assess the mental skills of girls counter parts as well as players at junior level.

CONFLICT OF INTEREST

There is no conflict of interest

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FINANCIAL DISCLOSURE

None

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